



Washington State Ferries

# Washington State Ferries Draft Long-Range Strategic Plan 2006-2030

April 2006



**Washington State  
Department of Transportation**



## **About Washington State Ferries**

Formed in 1951, WSF is the largest ferry transit system in the U.S.

WSF serves about 24 million passenger and vehicle trips per year;

Operates 10 ferry routes and runs nearly 500 sailings per day;

Provides service to eight Washington State counties and the Province of British Columbia;

Operates and maintains 20 terminals from Point Defiance to Sidney, B.C.; and

Provides priority loading for freight, bicycles, vanpools, and carpools.

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Cover Photo: Steven J. Brown, Courtesy of Washington State Ferries

# Washington State Ferries

## Long-Range Strategic Plan: 2006-2030

**Strategic Service  
& Investment Plan**



**Washington State  
Department of Transportation**  
Marine Division

April 2006



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# EXECUTIVE SUMMARY

## ES-1. Introduction and Policy Framework

Welcome to the Long-Range Strategic Plan for Washington State Ferries (WSF). This Plan is intended to guide WSF's future service and investment decisions through the year 2030. Developed with extensive input from the public and stakeholder groups, the Plan outlines the service changes, vessel purchases and terminal improvements that will allow WSF to meet the growing demand for ferry travel. WSF is part of the Washington State Department of Transportation, a cabinet agency reporting to the Governor. In addition to the Governor's office, ferry service and investment decisions are guided by the state Legislature, the Washington State Transportation Commission (WSTC), and the Washington State Department of Transportation (WSDOT).

The WSF Long-Range Plan will become a part of the Washington State Transportation Plan (WTP), which is scheduled for adoption by the WSTC in 2006. The WTP will form the basis for setting the state transportation system's investment priorities.

WSF is releasing this Draft Strategic Plan at an important juncture in the history of ferry transportation in Washington. Demand for ferry service is projected to rise sharply, but the system is constrained by tight financial resources, limited carrying capacities, and aging vessels and terminals. A new and updated Plan will help WSF navigate the present environment and set a future course in a way that best serves customers and taxpayers over the long term.

The primary goal of this Long-Range Plan is to prepare WSF to provide ferry service that is best able to meet future customer demand. WSF's ability to meet demand is measured by level-of-service (LOS) standards adopted by the WSTC. WSF quantifies these standards in terms of average wait time for vehicles, and "peak-of-peak" demand and capacity comparisons for walk-on passengers, with both standards measured over the course of a typical peak demand period, the average weekday afternoon commute time (3 PM to 7 PM).

## ES-2. Planning Process and Approach

WSF developed this Draft Plan using a three-step process described below. WSF has also consulted with stakeholders and the public throughout development of the Draft Plan. After Phase I of the project (where WSF identified challenges and service scenarios in each corridor), WSF embarked on a substantial public outreach effort, hosting nine public meetings and twelve stakeholder briefings. During the 45-day comment period following release of this Draft Plan, WSF will host another 11 public meetings.



## Routes and Travel Corridors

### San Juan Islands Corridor

- Anacortes/Friday Harbor routes
- Inter-Island routes
- International route

### North Puget Sound Corridor

- Port Townsend-Keystone
- Mukilteo-Clinton

### Central Puget Sound Corridor

- Edmonds-Kingston
- Seattle-Bainbridge Island
- Seattle-Bremerton

### South Puget Sound Corridor

- Seattle-Vashon Island passenger-only route
- Fauntleroy-Vashon-Southworth triangle service
- Point Defiance-Tahlequah

## ES-3. Demand and Ridership

Population and employment are expected to increase significantly between today and 2030, according to estimates from the Puget Sound Regional Council (PSRC) and the Office of Financial Management. WSF feeds these population projections into two computer models in order to project future ridership demand:

- The **PSRC model** projects the growth rates for cross-sound ferry commute-period trips, taking into account a base level of ferry service, future fares, local and regional land use policies, highway traffic, and expected roadway and transit investments, among other factors.
- The **WSF transportation model** estimates route choice and mode of access for each trip, considering fares, road congestion, the decisions made by other vehicles and passengers, ferry capacity limits, and other factors.

In the summer of 2005, after the corridor-level analysis and the Phase I public outreach was complete, two aspects of the PSRC model were changed, leading WSF to revise its demand analysis and Draft Plan:

- The model itself was recalibrated to better measure transit trips, improving the model's capability to properly account for walk-on ferry traffic.
- Kitsap County revised its 2030 population estimates, adding 8,076 households and an additional population of 18,911 (an increase of 6%).
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## How was the Draft Plan Developed?

1. Identify the challenges in each corridor, based on projected growth in ridership demand and vessel and terminal constraints.

2. Identify possible service scenarios in each corridor and evaluate each scenario using criteria:

- Operational feasibility
- Level-of-service impacts (rider wait times)
- Customer convenience
- Financial impact
- Implications for capital investments (vessel, terminal)
- Effects on walk-on ridership levels and local roadways

Identify the most preferable service scenario for each corridor.

3. Merge the preferred scenarios into a system-wide plan. Evaluate this plan against the same criteria, as well as against system-wide constraints such as vessel availability. Adjust as needed before finalizing the Draft Plan.

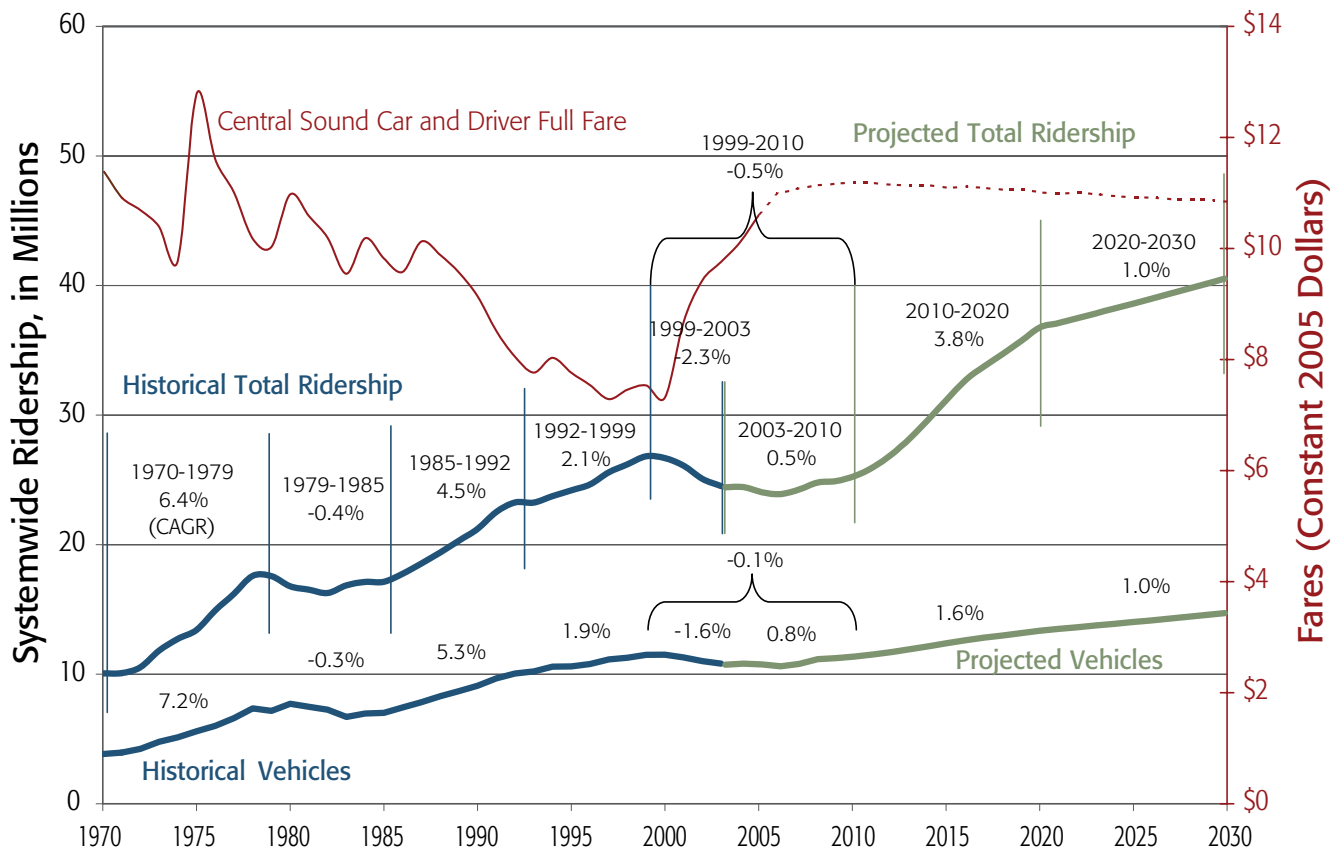


The changes to the regional model increased projected 2030 ridership figures by 25%, and the higher Kitsap population increased ridership by another 14%, leading to an overall increase of 42% for the Central Sound corridor.

WSF uses historic ridership data on the relationships between commute-period ridership and annual ridership to project annual ridership levels from the projection of peak traffic. While the afternoon peak is used for service planning, the annual ridership forms the basis of projected operating revenue.

As Exhibit ES-1 shows, WSF anticipates that its ridership will grow substantially in the coming years (even with base level of service) as fares stabilize, increasing at approximately the rate of general inflation starting in 2007. This rate of growth has historical precedent in other time periods with stable or decreasing fares. The bulk of ridership growth is expected to come from the walk-on commuter mode, as a result of expanded options for transit connections and lower vehicle growth rates due to capacity constraints for vehicles during the peak commute periods.

**Exhibit ES-1: Historical and Projected Systemwide Ridership  
Compound Annual Growth Rate (CAGR): Base Level of Service**



Source: Washington State Ferries and Berk & Associates, 2006





### ES-4. Situation Assessment

WSF used the ridership projections described above to predict the system's ability to meet LOS standards in the future and determined that the expected vessel and terminal configuration is not adequate to handle the projected growth in ridership without creating rider waits longer than acceptable under WSTC policy.

Under currently programmed service (Base Level of Service), incorporating existing fleet plus the four new vessels approved by the Legislature, all but three routes (Port Townsend-Keystone, Point Defiance-Tahlequah, and Vashon-Southworth) are projected to exceed their vehicle service standards by 2030, and there are passenger service challenges on the Seattle-Bainbridge route. Most of the service challenges are related to growth in vehicle trips, even though the vehicle share of new trips is significantly lower than current experience as most of the ridership growth is projected in the walk-on segment.

Beyond the challenges implicit in meeting LOS standards, WSF also faces constraints at its terminals and its landside connections. The most pressing terminal constraint is at the Fauntleroy Terminal, which is already operating near its capacity and, per the City of Seattle policy, can only be maintained and cannot be expanded. Colman Dock, in downtown Seattle, is another potential limiting factor. Even with planned expansion to Colman Dock there are limits to the total throughput that can be accommodated due to headway separation requirements, size of holding areas, and impacts on the Seattle street network and waterfront activity.

### ES-5. Draft Plan Service Enhancements

WSF's service plan is built on the premise that service should be added in a corridor when a route experiences congestion that exceeds the WSTC level-of-service standard.

In chronological order, highlights from the service plan include:

- A third vessel added to Edmonds-Kingston in 2010 in the summer and 2012 year-round. This addition will to address vehicle LOS on this route and help siphon traffic from Seattle-Bainbridge.
- The breakup of the South Sound triangle route and the addition of direct downtown Seattle-Southworth service in 2014, to address vehicle LOS in the South Sound and terminal constraints at Fauntleroy. To optimize this service change, a fourth operating slip at Colman Dock would be desirable.
- A third vessel added to Bremerton in 2015, to address vehicle LOS on this route and Seattle-Bainbridge.
- An additional vessel added to the San Juans routes in 2017 (6 boats in summer and 5 boats spring and fall), allowing more direct service between Anacortes and each island.
- A third vessel added to Mukilteo-Clinton in 2018 in the summer and 2022 year-round, to address vehicle LOS on this route.



- A fourth vessel added to Edmonds-Kingston in 2023, to continue to address vehicle LOS across the Kitsap travel shed.

To deliver this level of increased service will require WSF to build additional vessels. Exhibit ES-2 summarizes the vessel procurement needs that are necessary to support the service expansion plans as well as address vessel replacement needs through 2030.

## ES-6. Draft Plan Service Implications

### Exhibit ES-2: Timing of Vessel Procurements Necessary to Implement the Draft Plan

	Procurement 1 2006-2013	Procurement 2 2014-2021	Procurement 3 2022-2030
<b>Draft Plan</b>	<ul style="list-style-type: none"> <li>• 4 Expanded Issaquah</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Expanded Issaquah</li> <li>• Modify 3 Jumbo Mark II</li> </ul>	<ul style="list-style-type: none"> <li>• 6 Expanded Issaquah</li> </ul>
<b>Service Changes</b>	<ul style="list-style-type: none"> <li>• 3 Replacements</li> <li>• 3-vessel Kingston</li> </ul>	<ul style="list-style-type: none"> <li>• 2-vessel Seattle-Southworth</li> <li>• 3-vessel Bremerton</li> <li>• 6-vessel San Juan</li> <li>• 1 Replacement</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Replacements</li> <li>• 4-vessel Kingston</li> <li>• 3-vessel Mukilteo</li> <li>• 2-vessel Keystone (Summer)</li> </ul>

Source: Washington State Ferries and Berk & Associates, 2006

The service expansions proposed in the Draft Plan would increase service hours by approximately 40% over the Base Level of Service. By providing more attractive service, WSF will capture additional cross sound trips. As a result, total ridership in 2030 is projected to increase by 6.8 million trips, or a 16.8% increase over Base Level of Service.

Even with these higher ridership levels, the Draft Plan achieves the goal of lowering average wait times to levels near or below the WSTC maximum congestion delay standards on most routes. There are exceptions, however: the Seattle-Bainbridge and Seattle-Bremerton routes are projected to exceed their vehicle wait-time standards in 2030. This reflects the fact that in several areas the Draft Plan the ferry system near its physical limits, including limits imposed by terminals, connecting highway infrastructure and even maritime geography. In light of these constraints, the Draft Plan represents WSF's best effort to meet projected growth in ridership.

While the Plan is designed as WSF's best means of accommodating the projected future growth in ridership, this growth reflects changes in demographics and regional travel patterns that may or may not come to be. In recognition of that fact, the Plan has been designed to be flexible — equipped to handle as much of the projected growth as possible, but capable of being scaled back to avoid over-investment if that growth does not materialize.

Flexibility is possible because the vessels scheduled for purchase in the first and third decades of the planning period will primarily replace retiring vessels, while



the majority of vessels needed for expansion are not scheduled until the second decade. This schedule will allow WSF to observe real ridership growth until a decision point in approximately 2010 before deciding what service enhancements are really necessary.

### **ES-7. Draft Plan Cost Implications**

Service improvements have operating cost implications. As the Draft Plan's service unfold over time and a number of newly procured vessels are put into service on new and existing routes, the operating costs will gradually increase beyond the cost of the Base Level of Service. Additional operating costs for Draft Plan implementation start in the 2009-11 fiscal biennium. The total cost of the additional service adds approximately \$1.1 billion over the planning period, a 16.5% increase over the Base Level of Service.

The capital investment required to (1) maintain the existing fleet and facilities and (2) deliver the new vessels and terminal improvements, as outlined in the Draft Plan, would total approximately \$5.6 billion over the next 25 years (in year of expenditure dollars by biennium) including debt service commitments.

### **ES-8. Draft Plan Funding Implications**

**Operating costs** are funded primarily through fare revenues collected from sales of ferry tickets. The current State operating subsidy is comprised of revenues from a variety of sources: dedicated motor fuel tax, motor vehicle registration fees, and licensing fees, discretionary taxes and fees from Motor Vehicle Fund, and multimodal taxes. Since the Legislature has directed WSF to transfer the Seattle-Vashon passenger-only service to another operator by July 1, 2007, it is assumed that the contributions from multimodal taxes will end at that time.

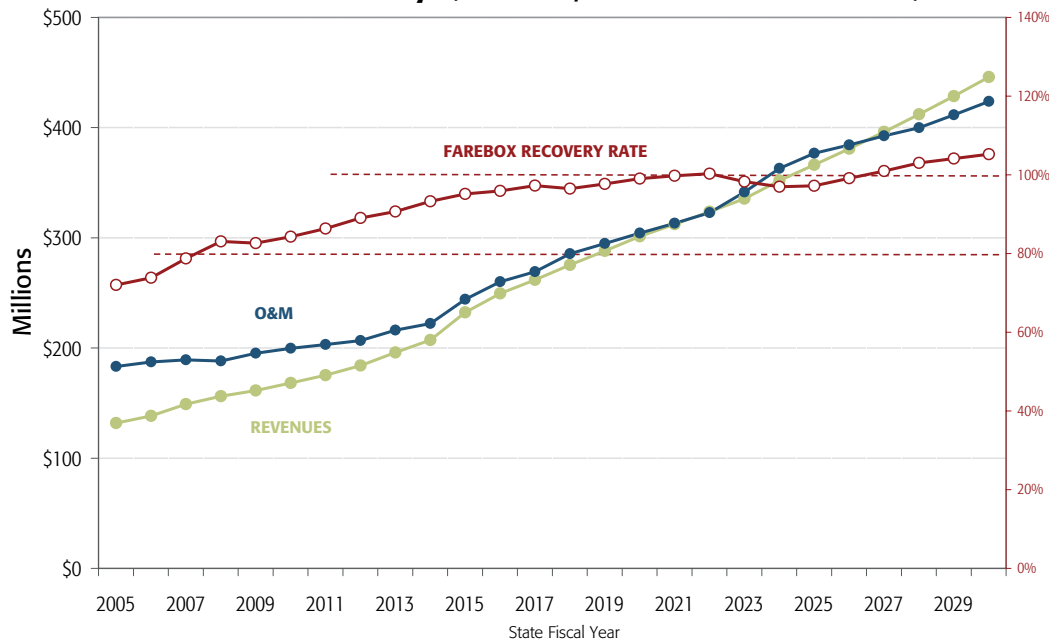
A key assumption in the Draft Plan funding implications is that any tax revenue in excess of the amount necessary to fund the WSF operations is assumed to be transferred to capital program funding. This will be one of the assumptions that will be reviewed by the Legislature-mandated JTC Ferry Financing Study.

Future tax support includes the newly enacted transfer of Capron Funds to the ferry operating account. Fares are assumed to increase annually by 2.5% to keep up with inflation. With this fare assumption and ridership growth projected in the Draft Plan, the farebox recovery rate is estimated to gradually increase from the current 75% to reach 100% in fiscal year 2022.

This growing cost recovery rate creates excess subsidies that are assumed to be made available for capital funding. Exhibit ES-3 shows projected operating costs, operating revenues and farebox recovery rates

**Capital costs** are financed separately from operating costs through various public funding. The primary source of revenue is the Puget Sound Capital Construction

**Exhibit ES-3: Projected Draft Plan Scenario: Revenues, Costs, & Farebox Recovery** (Year of Expenditure Dollars, in Millions)



Source: Washington State Ferries and Berk & Associates, 2006

Account, which includes revenues generated by the motor fuel tax, federal grants, local funds, and bond proceeds. An approximately \$1 billion contribution is assumed from excess operating subsidies available once the cost recovery rate on operations exceeds approximately 85%.

Considering all of the reasonably assumed available sources of capital funding, there will be a need for additional financial support of approximately \$410 million over the planning horizon. It is important to note that this funding shortfall is above and beyond both excess subsidies from operations (\$1 billion) and significant appropriations from the Motor Vehicle Account to fund preservation needs at a level consistent with the recommendations from the 2001 Joint Legislative Task Force on Ferries level (\$2.6 billion).

## ES-9. Next Steps

The next step for the Draft Plan is to go through its second round of public review and comment. During this round of public involvement (11 meetings during April and May of 2006, throughout the WSF system) WSF hopes to gain feedback from a variety of stakeholders, including its riders. WSF will consider all feedback when developing a Final Plan, which is scheduled to be adopted as part of the Washington Transportation Plan in summer 2006.

